



Neonatal diarrhoea in pigs

Jensen, Tim Kåre

Publication date:
2010

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Jensen, T. K. (Invited author). (2010). Neonatal diarrhoea in pigs. Sound/Visual production (digital)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Neonatal diarrhoea in pigs

Tim K. Jensen

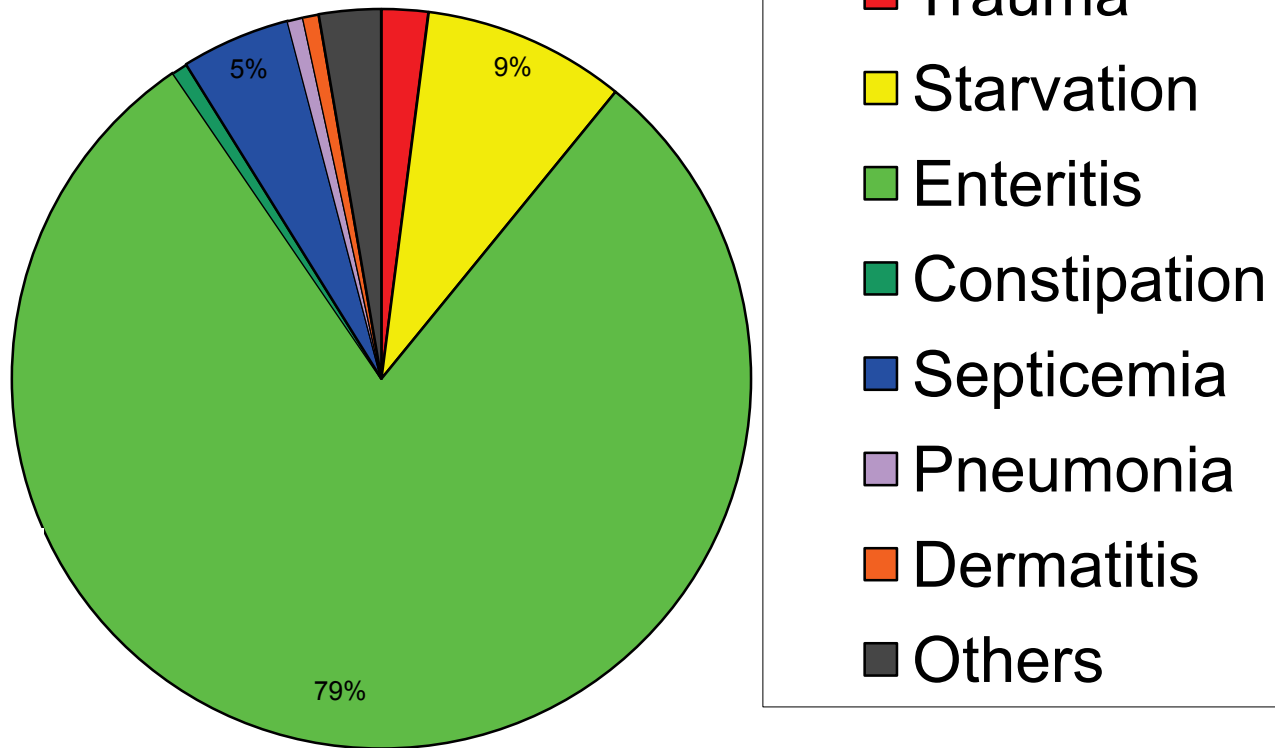
The 34th NSVP Meeting Oslo 2010

Neonatal diarrhoea in pigs

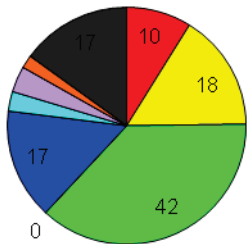
Laboratory findings

- Agents found at Danish laboratories
- Is there a change over time?
- New Neonatal Porcine Diarrhoea

Diagnoses, pigs 0 - 5 days
2008, 147 submissions
Laboratory for Swine Diseases Kjellerup



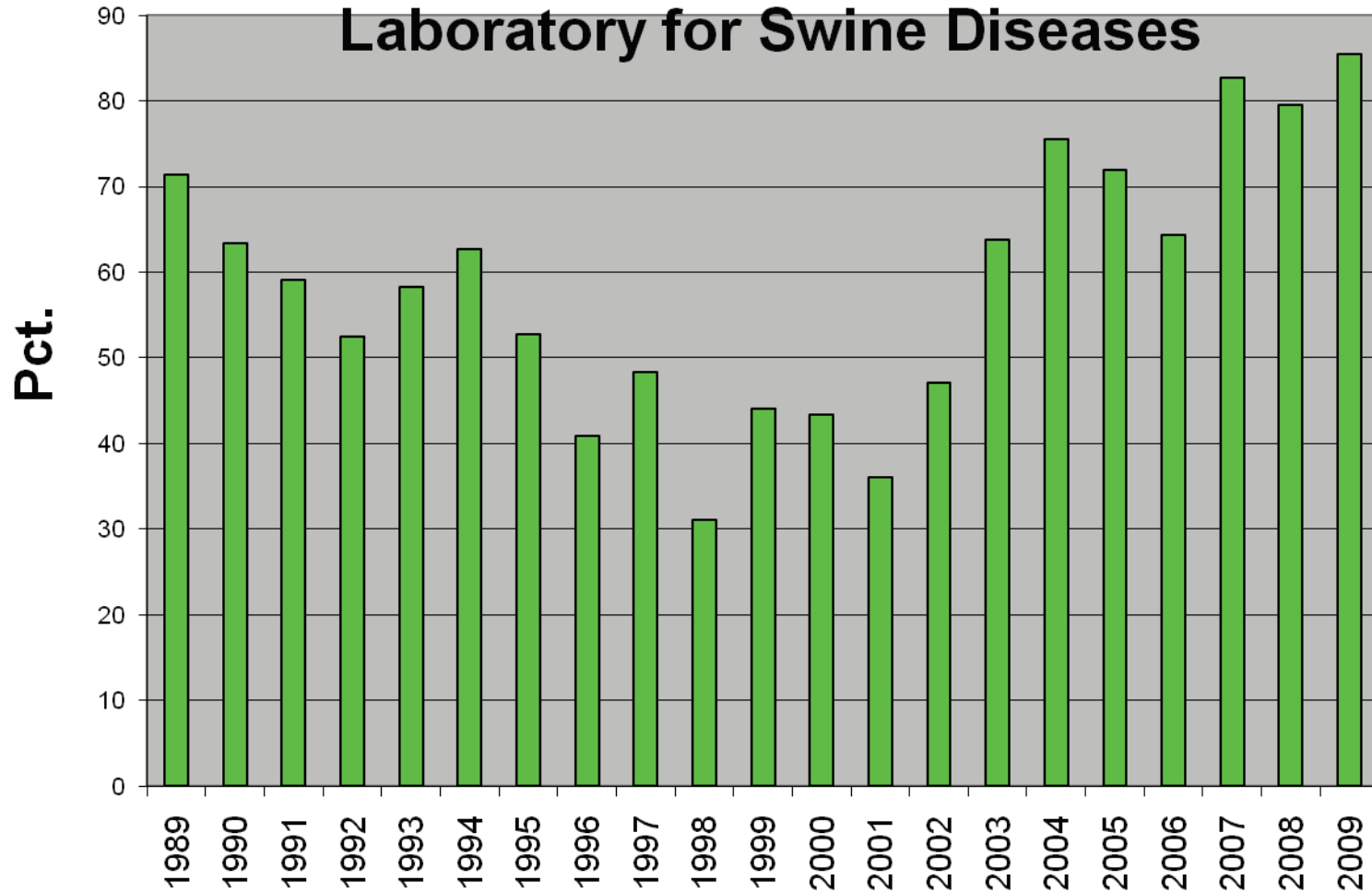
1998



Submissions with enteritis, in percent of submissions

Pigs 1 - 5 days, 1989 - 2009

Laboratory for Swine Diseases



Neonatal diarrhoea in pigs

well-known causes:

- Bacteria
- Virus
- Management
 - Starvation
 - Low temperature
 - Colostrum deficiency
 - Poor hygiene

Neonatal diarrhoea in pigs

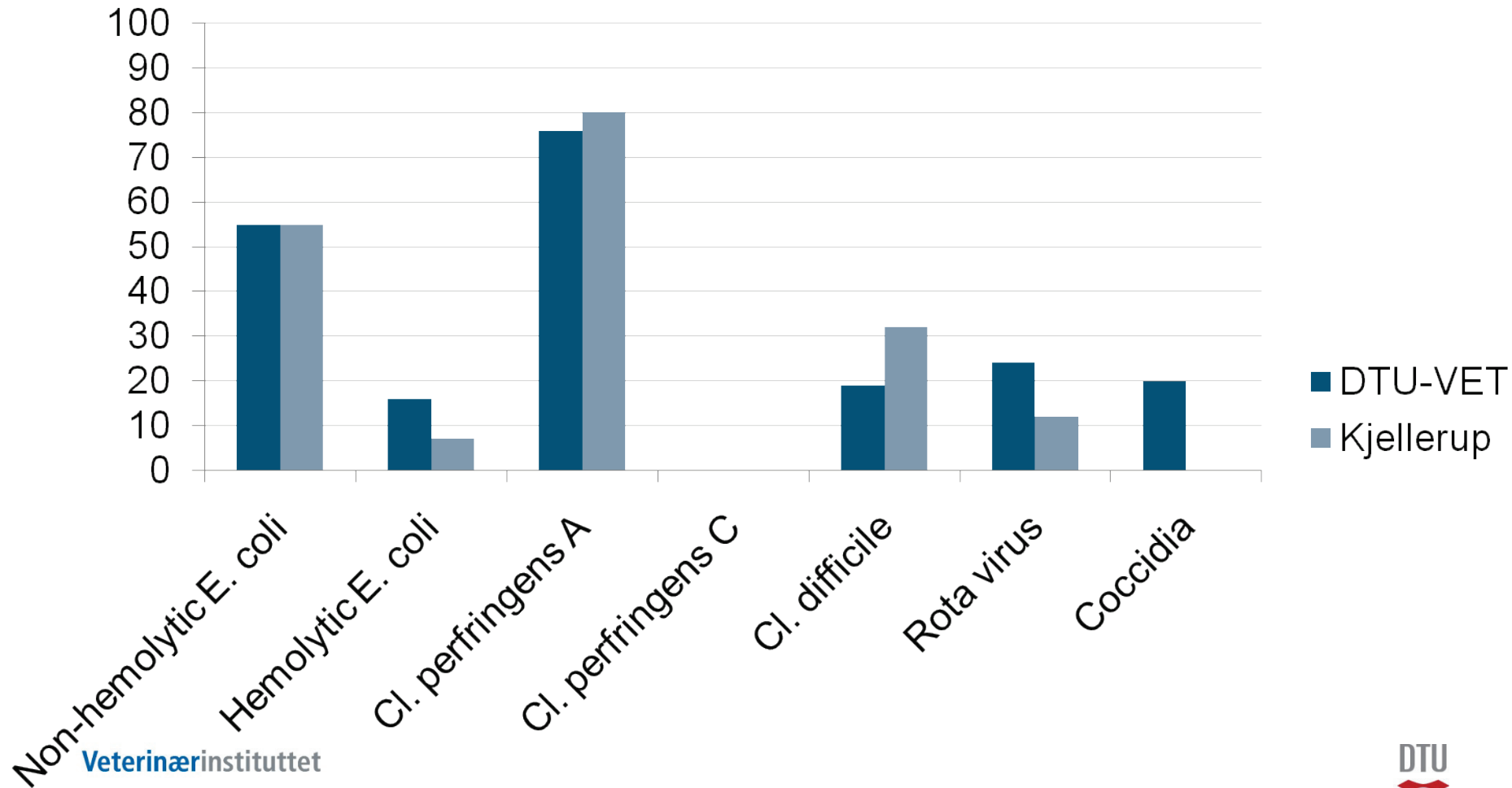
pathogens:

- E. coli
 - Hemolytic E. coli, ETEC
 - Non-hemolytic E. coli, ETEC
- Cl. perfringens, type C
- Cl. perfringens, type A
- Cl. difficile
- Rotavirus

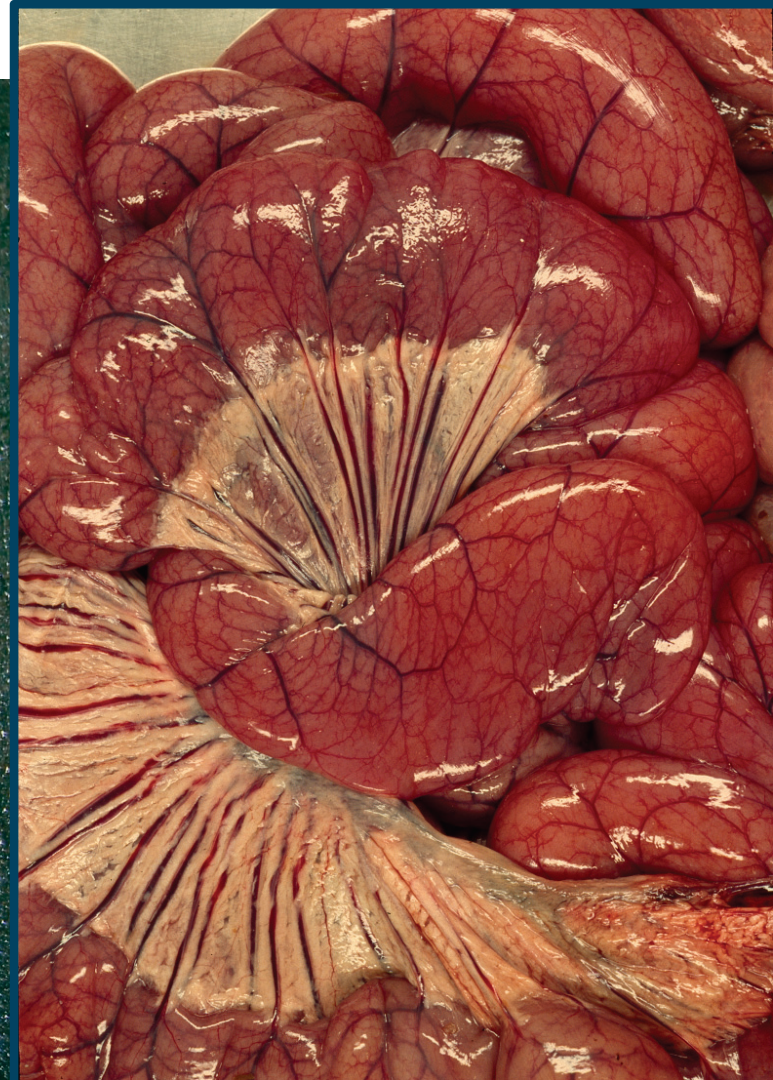
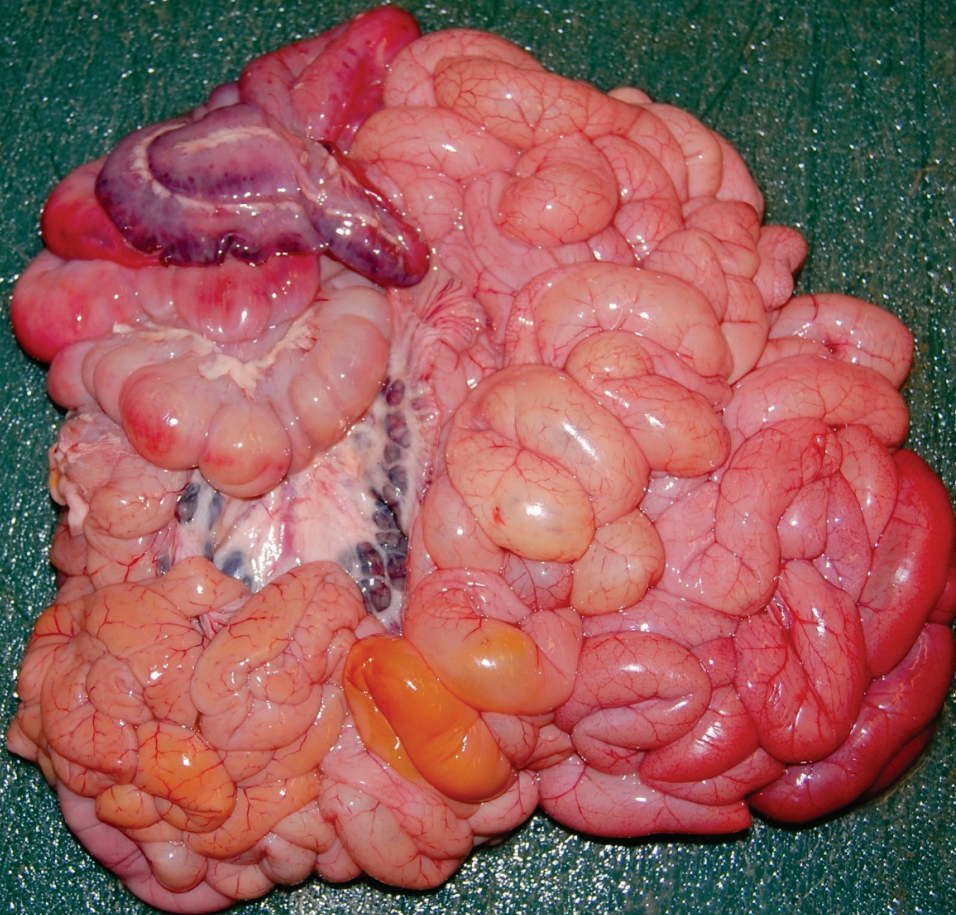
Positive analyses in pigs 2008

DTU-VET 0 – 4 weeks

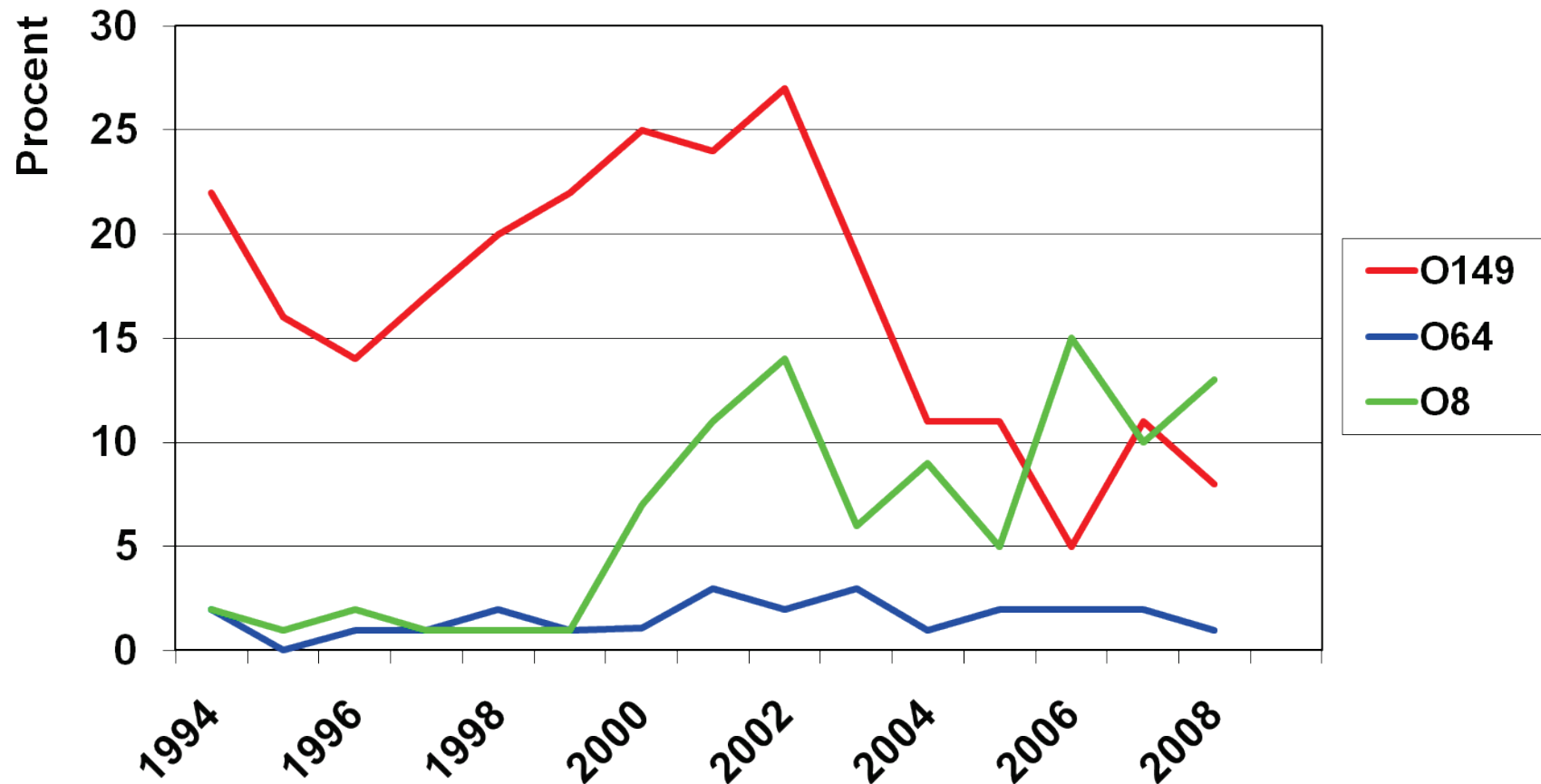
Kjellerup 0 – 5 days



Hemolytic E.coli, O149



Isolation of *E. coli* types, 0-4 weeks,
compared to submissions with the anamnesis diarrhoea,
SVS/DFVF/DTU-Vet



Virulens factor F4, genotype distribution in young breeding animals

Race	2003, Sensitive	2008, Sensitive
DD	12 %	2 %
LL	99 %	19 %
YY	81 %	4 %

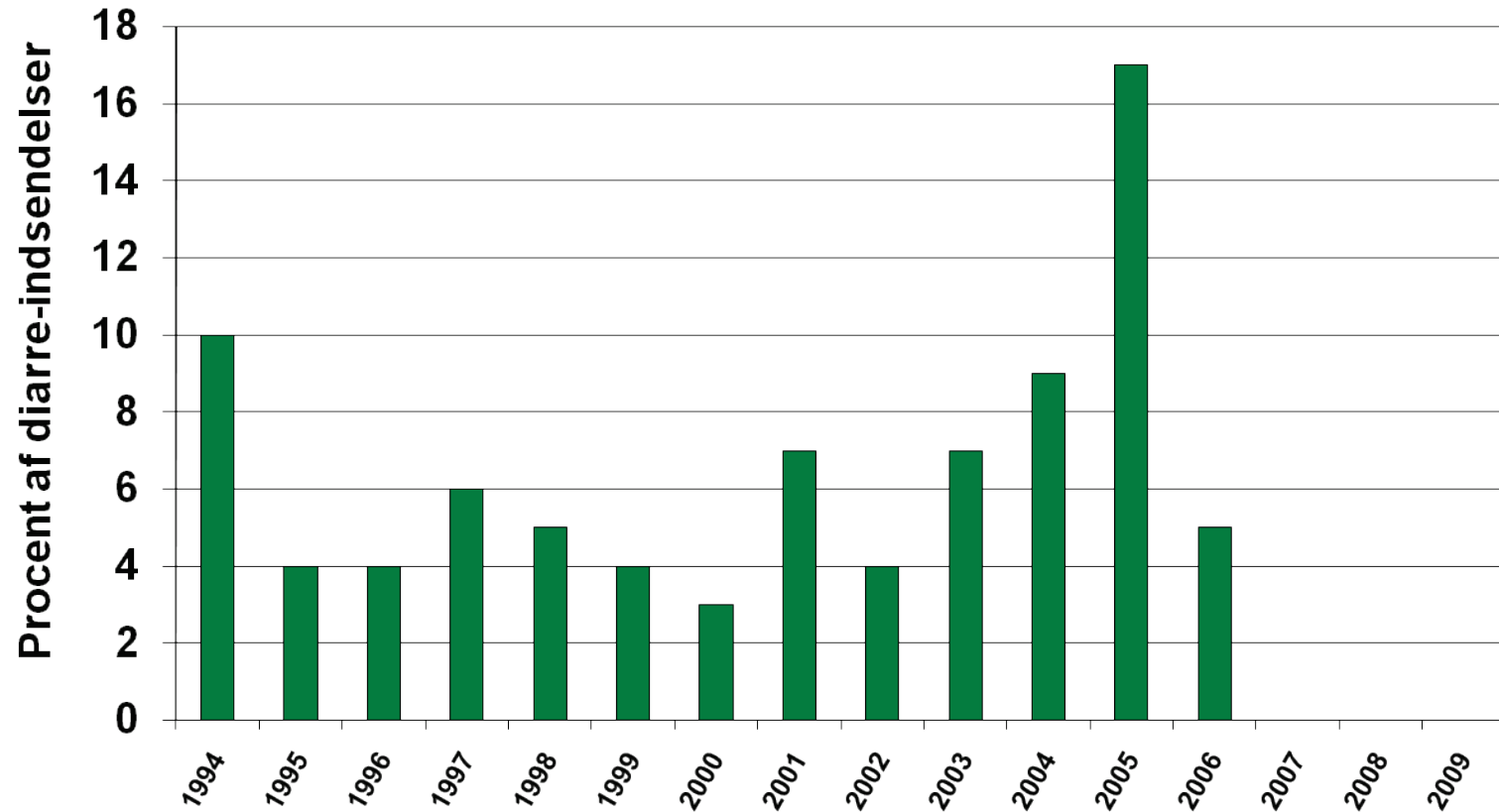
Non-hemolytic *E. coli*?, non ETEC



Necrotizing enteritis - Detection of *C. perfringens* type C

Pigs 0 - 4 weeks, DTU-VET

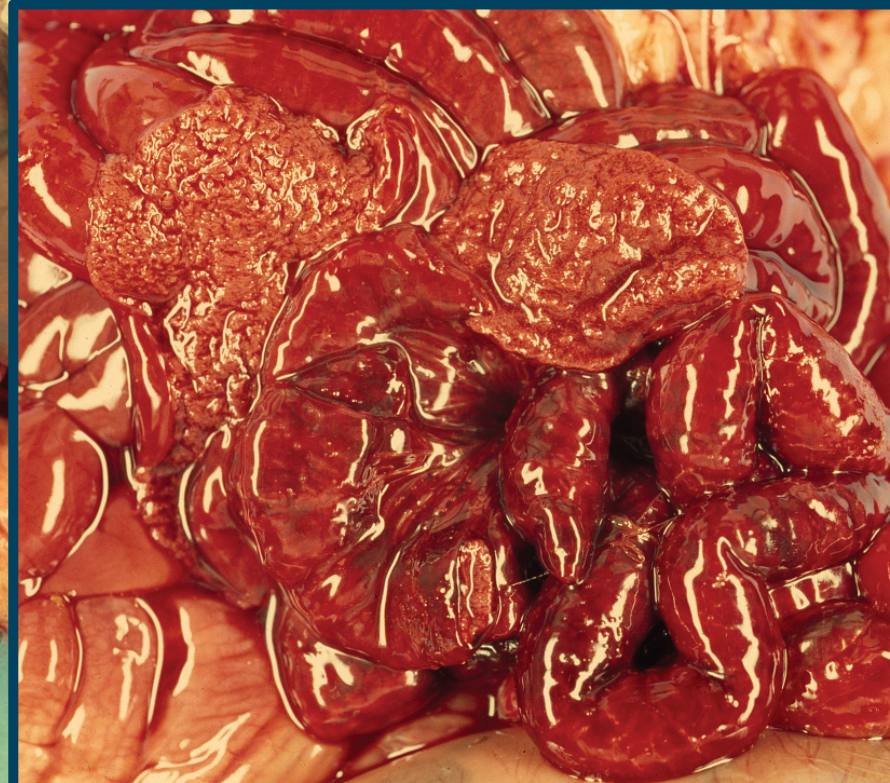
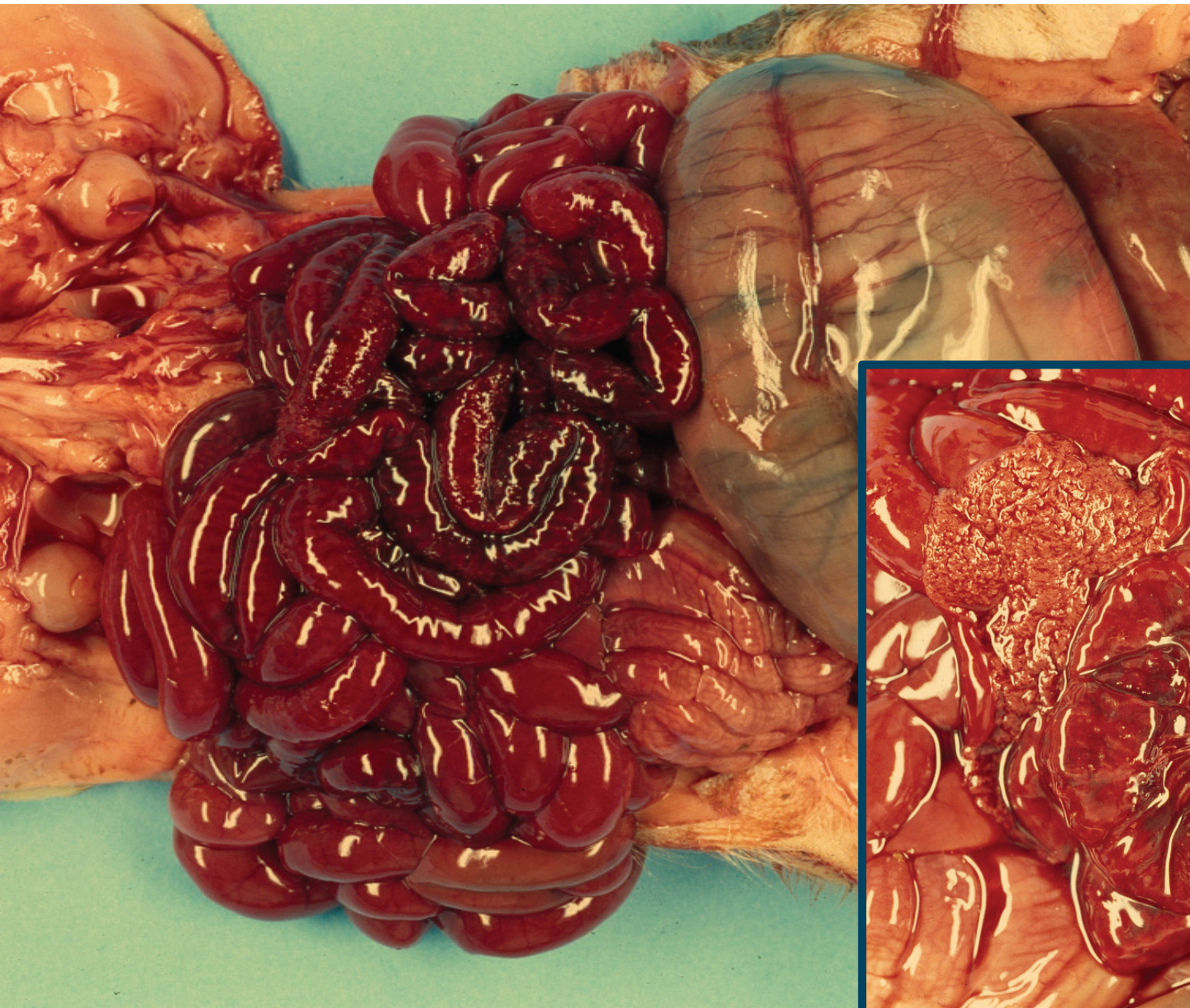
Procent of submissions with anamnesis diarrhoea



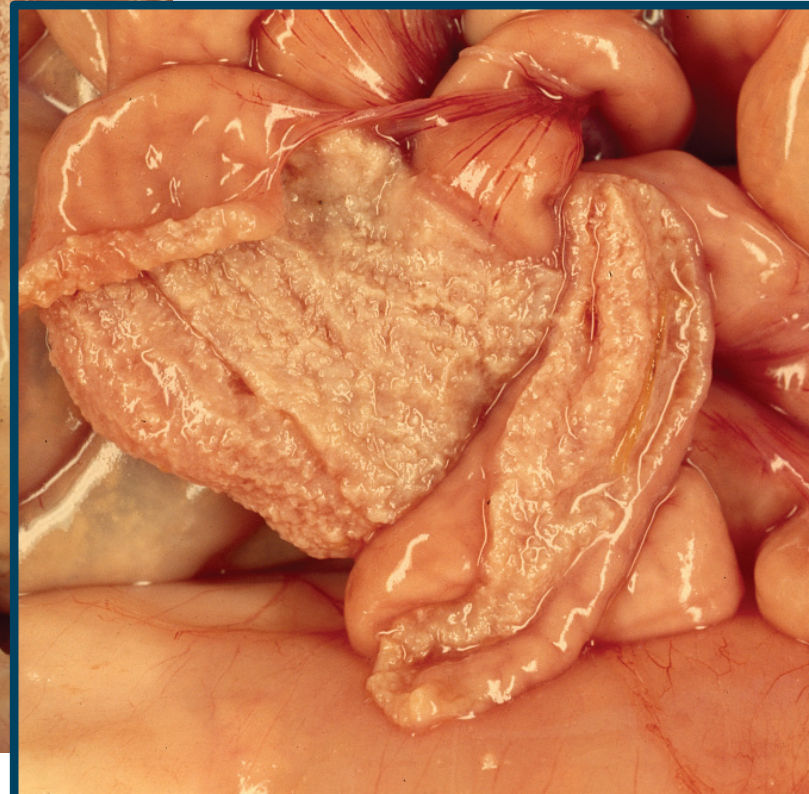
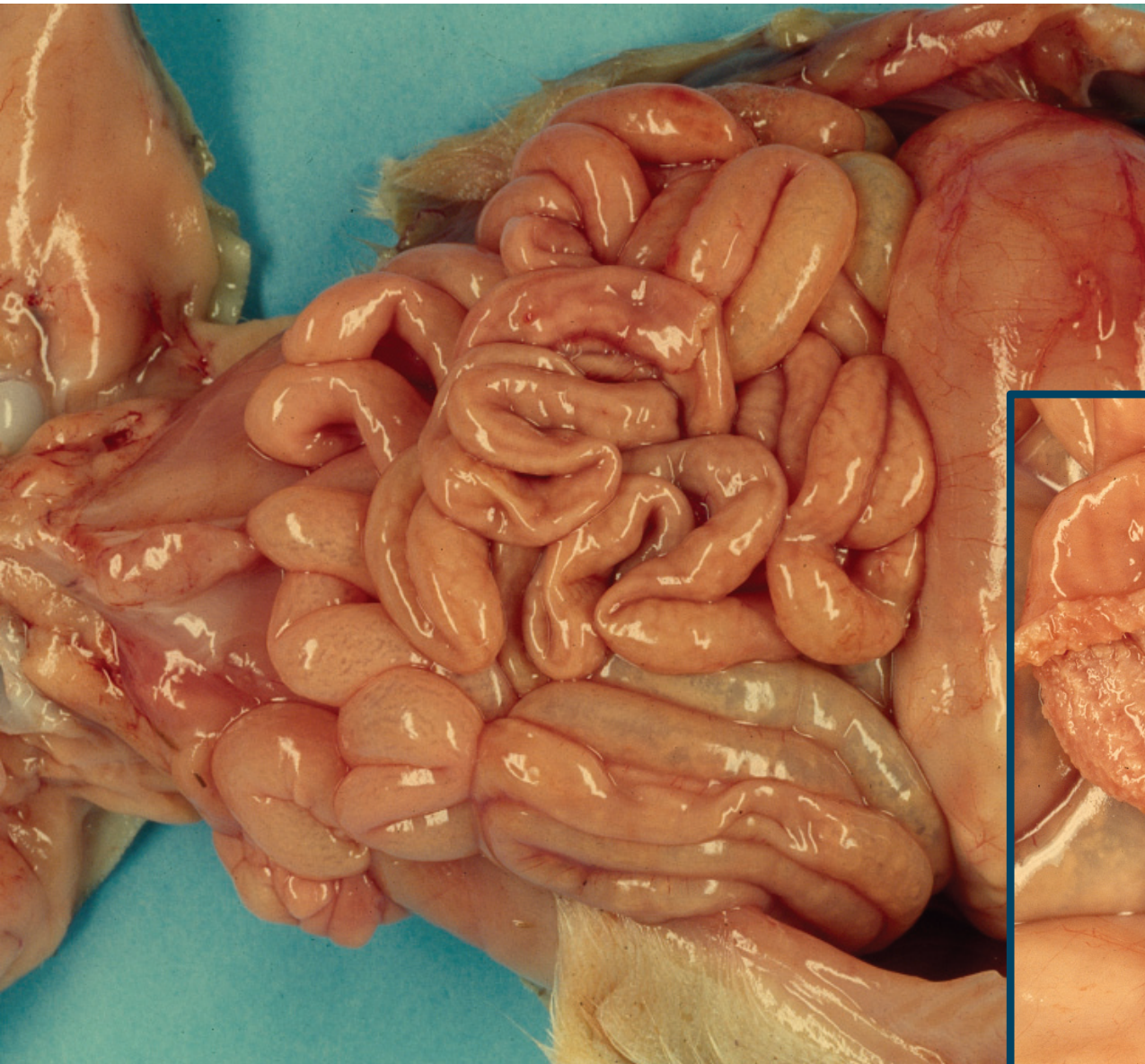
Cl. perfringens, type C necrotizing enteritis



Cl. perfringens, type C acute necrotizing enteritis



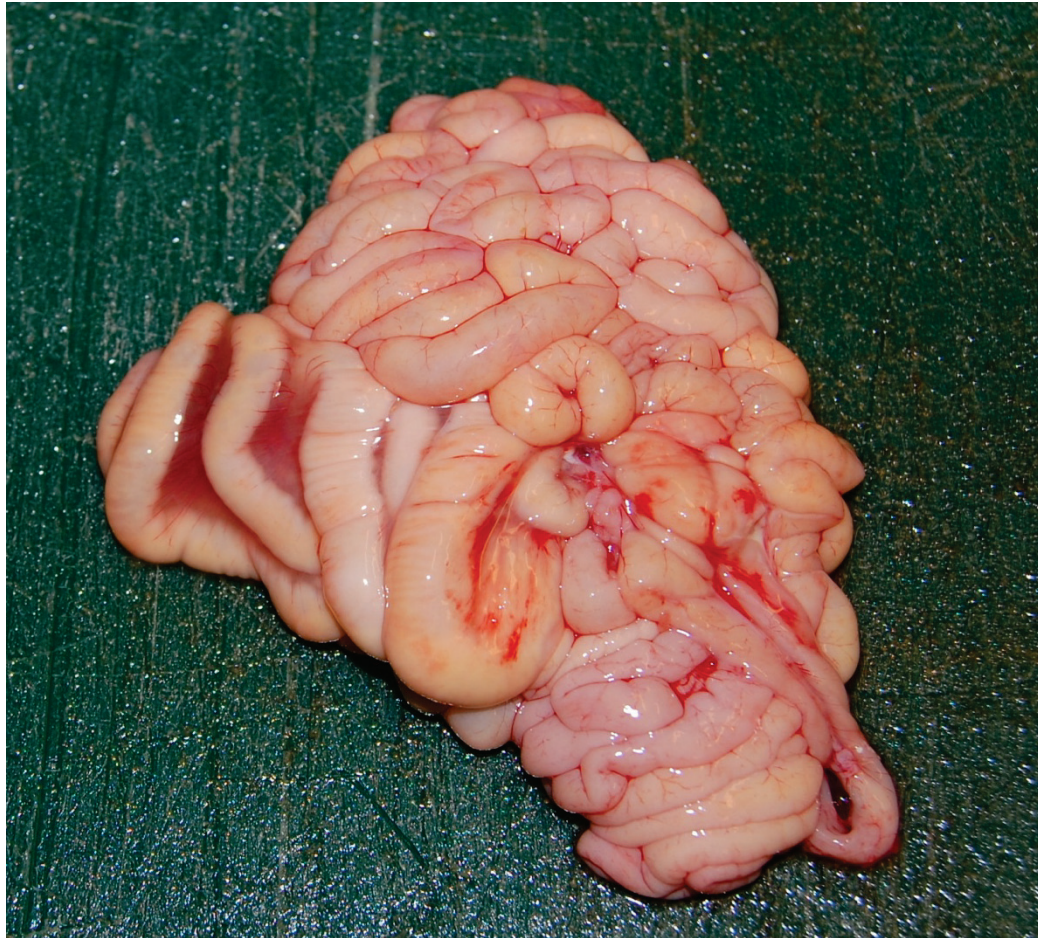
Cl. perfringens, type C mild necrotizing enteritis



Cl. perfringens, type A?

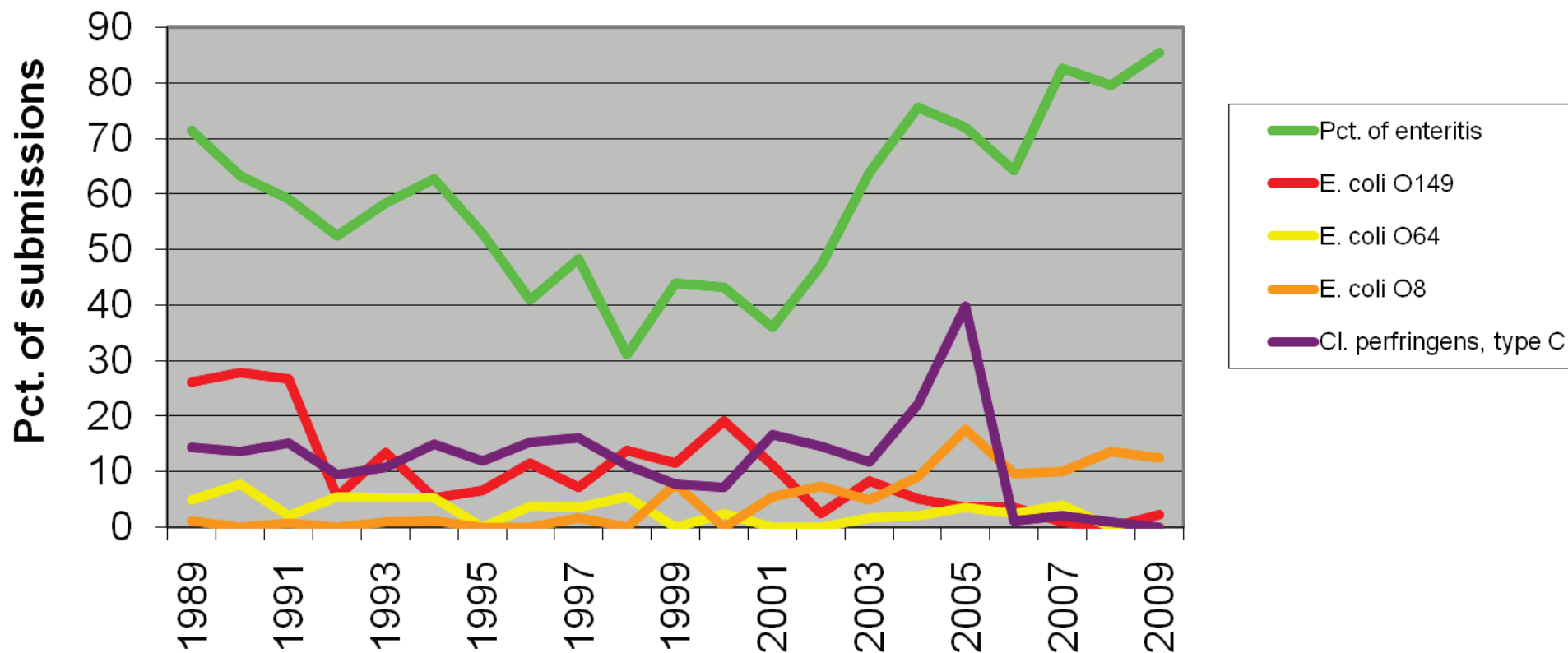


Cl. difficile ?



New Neonatal Porcine Diarrhoea (NNPD)

Bacterial diagnoses in percentage of enteritis in pigs 1 - 5 days
1989 - 2009
Laboratory for Swine Diseases



New Neonatal Porcine Diarrhoea?

- New pathogens
 - Bacteria (Cl. Perfringens type A?)
 - Virus
- Small / immature piglets
 - Low birthweight
 - Immature
 - Insufficient colostrum supply
- Nutritional, toxins in the sow feed
- Antibiotic treatment

New project

Titel:

- **New Neonatal Porcine Diarrhoea**
 - Aetiology and diagnosis
 - Treatment
 - Prevention

Period:

- 01.01.2010 – 31.12.2013

Collaboration

- DTU-VET and VSP (Danish Pig Industry)

Economi:

- 10.5 mill. Dk kr.

New Neonatal Porcine Diarrhoea Hypotheses II

- ✓ NNPD is a syndrome, different from classic *E. coli* diarrhoea, necrotizing enteritis (*Cl. perfringens* type C) and rotavirus
- ✓ NNPD leads to changes in the gut which are characteristic for the syndrome
- ✓ Infectious agents have a significant role in NNPD Toxin production from *Cl. perfringens* type A and prevalence of *Cl. difficile* affects NNPD
- ✓ The establishment and composition of the intestinal microbiota of the newborn pig is important for the development of NNPD

New Neonatal Porcine Diarrhoea Hypotheses II

- ✓ Toxin production from *Cl. perfringens* type A and prevalence of *Cl. difficile* affects NNPD
- ✓ Therapy with antibiotics initiates NNPD by altering the intestinal flora
- ✓ Diagnosis of herd-specific causes is necessary for an appropriate intervention
- ✓ NNPD can be prevented by changes in management, stabilization of the intestinal microbiota or by vaccination against specific agents identified in the project.

New Neonatal Porcine Diarrhoea

- **New Neonatal Porcine Diarrhoea**
 - Ph.D. project in epidemiology
 - Ph.D. project in pathology and in situ detection
 - Ph.D. project in microbial ecology
- We look forward to present the results